# THE CROSSBILLS OF NORTHEASTERN WYOMING.

BY REV. P. B. PEABODY.

THE data set forth herein are much too meager for publication, greatly interesting as are the underlying facts to which they refer. What is here chronicled is hence laid before students of bird biology with suggestive and stimulative intent. It seems incredible that the apparent difficulties in the way of a more intimate knowledge of the nesting conditions that prevail with some of our mid-western races of Red Crossbills should continue to baffle those that have attained skill, through experience, in the unraveling of bird mysteries.

On the shale hills of Weston County, Wyoming, and on the rocky slopes of the Bear Lodge Hills of Crook County, the ever-present bull-pine shelters or nestles, according to their whim, the nomadic flocks of the large-billed form of crossbills that are known as the Bendire Crossbill (*Loxia curvirostra bendirei*). This race is no less irregular in its periodic and seasonal movements than are others of its congeners. Except for a brief time in the very late summer, when the seeds of the bull-pine begin to fail, there would seem to be no time during the annual circuit when the Sierra Crossbill may not be found in northeastern Wyoming. It is rather sparingly resident; and, except for the seasons when it freely breeds, it is irregular in its favored haunts.

Interested, at all times, in the habits of all birds, the writer has, of late years, given special attention to questions of the breeding times of many species of North American birds. He has collated from printed records and gathered from private sources all eligible records for the nesting times of all the crossbill races. For *L. c. minor*, the extreme dates available for record are March 10 and August 6. Of late a September instance (Brewster, Maine) has come to light. For *L. leucoptera*, January 20 and June 12, and for *L. c. stricklandi* (in Mexico), a period extending back into January (perhaps December), and forward to about March 15. (See 'Zoe,' Vol. IV.)

By all analogy, the Sierra Crossbill should nest during February

and March. By all record, the utmost we have to swear by is the vague statement by the late Professor Knight, of the University of Wyoming, that, "in 1897, while in the Bear Lodge Mountain, [he] saw [the Bendire Crossbills] in flocks of several hundred"; that it was "the 24th of July"; and that "the young were full grown." (Univ. Wyoming Bull., No. 55, p. 120). (It is not impertinent to add, that never, under any circumstances, do we in our day, see, on the Bear Lodge Mountain, flocks of crossbills exceeding fifty in number.)

With these inconclusive data for his only guide the writer, during the spring and early summer of 1904, made diligent search for the nests of the Sierra Crossbill; spurred on, with quickened enthusiasm, by the spirited chatterings and the ardent searches for unexhausted pine cones on the part of ever-present and often-numerous birds. And yet the writer does not recall a single instance of any act remotely interpretable as connected with nesting or the care of the young during the entire season of 1904. On December 20, 1904, however, one remarkably sunny and mild day, just before sunset, a most beautiful but previously unheard song came wafted, ventriloquially, to my back door from some near-at-hand bull-pine. The singer was sought out and proved to be a male Bendire Crossbill. He was sitting on the very top of a small pine, quite absorbed in his own tone-productions. For the warblings were real *tones*, though decidedly weak, fitful and soliloquial. They might be characterized as weak but immeasurably sweeter paraphrases of the brilliant song that *L. c. minor* sings, atop the tall spruces of Saint Louis County, Minnesota, during early June.

Scanty attention was vouchsafed the crossbills during the time intervening between December 20, 1904, and the first of February, 1905. Oblivious of the fact that wonderful and fascinating events might be going on, the while, in the crossbill world near by, the writer patiently awaited the time indicated in the books for the probable celebration of the nuptials of his very interesting crossbill friends. On the early morning of February 2, 1905, the writer made the following record in his notes: "This morning, at eight o'clock, with the thermometer at thirty degrees below zero, I saw one of a small flock of about eight crossbills feeding another. The feeder proved to be a male; and I must hasten to look for nests; if, even at so early a date, a crossbill is feeding his mate."

Crossbills were, in the following days, fairly abundant and easy to observe. Yet go where I would, search where I might, over the hills and through the cañons of the vicinage of Newcastle, Weston County, no trace could I find of anything like domestic occupations among the busy crossbills. But on the morning of February 12, but forty feet or so from the small pines whereon I saw the feeding operations of February 2, I found, to my incredulous astonishment, a female crossbill feeding three young in a bull-pine sapling not ten feet high, on the very corner of my church lot.

"A male feeding his mate, indeed," grumbled I to myself, as to the feeding incident of February 2 in the very heart of town. The birds were not four feet from my head, and I had every opportunity of watching them critically for four or five minutes. The three fledglings were very hungry (young crossbills are *always* hungry), and sat on the pine boughs, about their mother, waiting for the filling and the subsequent un-filling of her throat with the bull-pine seeds. One youngster, after being partially filled up, as to his crop, removed a foot or so from the rest of the family and began intently to pry at the bark of the limb on which he sat. (This operation I have seen enacted several times since; and I am quite convinced that it has much to do with the nascent crossing of the mandibles.[1]) Eager to secure at least a single example of these young (still believing the rearing of these birds, at so early a date, to be unusual), I searched for them a half-hour later, they having in the meanwhile impulsively flown from the sapling of their morning luncheon to some spot unknown. Fortunately, they were found on the same lot and but fifty feet from the spot where they had just been seen, perched, quite as before, on another pine sapling. With a mop-stick as my weapon, I tried to secure one of the young crossbills. It sat a few inches from its mother, awaiting her good offices. At the stroke of my weapon the fledgling flew — though he was the

[1] There seems to be no apparent law regarding the direction in which the lower mandible crosses the upper. Of fifteen specimens respecting which record has been made, ten were males and five were females. Four of the females had the lower mandible crossing to the left; with one specimen having the mandible crossing to the right. In six males the crossing was toward the right, and in four toward the left. Thus eight specimens had the mandible crossing to the left, and seven to the right. No regularity thus appears; and it is a fair question for speculation whether or not the curvature is not *produced*, indifferently, by each juvenile, according to its own impulses.

nearer to the point of my stroke — while the mother fell at my feet. Repeatedly did I see the father of these young, that same morning, at his task of double parenthood. His round of pasturing seemed very narrow, being confined, in the main, to the few small pines about my residence.

Two days later I secured two of the young crossbills. Of these two, one, the female, had both mandibles as yet absolutely straight; while her brother had a slight crossing of the mandibles at the tips.

Actions of the parent crossbills, repeatedly studied at this time, revealed somewhat of mode and habit. By light of this added knowledge one learned to catch the meaning of acts previously meaningless. Thenceforward it became possible to watch not a few family parties at their feeding; and also to measure the purpose of flights previously without apparent meaning. It thus became plain that the parent crossbills would alternate in making long excursions after pine seeds for the young; the latter remaining, the while, in the manner of so many fledged birds, motionless, but in no sense silent, in the very spot where the departing parent had left them.

The note of the young crossbills, that characteristic note whereby all fledglings direct their homing parents to the hungry throats that await them, is unlike any other utterance of the kind. It is a clear, mellow, cheery, yet rather querulous, utterance. Its ordinary form is a monosyllabic *peet*; or a dissyllabic *peetiv*; which, iterated about once a second, in irregular groups, may become, under stress of unusual eagerness, a resounding *pee-tiv-tiv*. This call, in varying forms and intensities, may be heard all the summer long, where the crossbill families are found; being heard, at times, even when the family is on the wing; and even, as I am quite sure, uttered by birds at least a year old. Indeed, a slight variation of it finds place in the nuptial song of the male crossbills. (The coherence, for long periods, of the crossbill families, is indicated by the fact that female No. 2126 was shot in the act of feeding No. 2125, which is manifestly a bird of the previous season.)[1]

Up to April 17, no crossbill nests were found, although minute search was made in all neighboring bull-pine areas affected by the

[1] See next footnote.

birds. On the evening of the date in question, at the end of a day spent in the study of Piñon Jay nesting habits, a junco of doubtful identity and interesting mien attracted my attention midway up the side of a steep, heavily wooded cañon near Newcastle. The junco led me a merry race, but was overtaken just at the point where a little gorge ran downward through the small pines. In a moment a sharp, anxious *chill-chill-chill* note resounded, a few feet away and quite above me, in the pines. A female crossbill was flitting about, most excitedly, with tail a-jerk, quite English Sparrow fashion. A prompt hiding amid scanty covert on my part made no change in her goings and comings; quickly marking the spot, I ran back a hundred yards for my note-books. On returning to the crossbill site, all things near at hand were found to be silent and deserted. A few moments of search, in the dim light, gave no clue, but the instinct of telepathy proved a better help. In a very slender six-inch pine, about sixteen feet high, something like a nest appeared some twelve feet from the ground, slightly concealed by sparse pine branchlets. At a sharp rap on the stem of the tree, the female crossbill left the nest. The eager antics of the climber alarmed her not a little, and she kept flying about, ever iterating her excited, *chill-chill-chill*; a call which I had never heard before, save when, a few weeks previously, a pair of birds assailed me with the same call, in a cañon bottom, after the loud, echoing discharge of my gun. The crossbill nest contained two young. These, to the best of my judgment, were two or three days old. The nest was, in all essentials except that of the placing — which was in a semi-vertical fork — like typical nests of the Piñon Jay. It was basally formed of fine twigs and plant stems, and was lined with grass and hempen fibers. The outer diameter is about seven inches; the inner is one and one fourth inches, and the cavity two inches across. While I was examining the nest and young, the mother disappeared; and the delighted observer hastened away, for the night air was chill for the callow young. On April 22, I found the mother crossbill brooding. Upon a rap on the tree-stem, she flew away and did not return. One young had disappeared, while the other had doubled in size, during the interim of five days. On the day following I found the nest deserted and empty. My surmise is, that the Piñon Jays, which were passing continually by in their

townward scavenging for the benefit of their young, had picked up the two young crossbills, one after the other, in the probable absence of both parent birds. It is even possible that the youngsters were removed to places of safety by the mother crossbill herself.

No later nests were found; but families, with young noisily clamoring for food, were heard all summer long. In the great majority of cases, the broods were of three only; but two broods, at most (and possibly but one of these), exhibiting four young birds. Examination of my small series of crossbills shows that birds of a year old, and a little over, were sexually neutral.[1] These were constantly in company with families containing young. These family groups were noticed throughout the summer of 1905, until September. On the Bear Lodge slopes of Crook County a few such were seen early in September; the mature birds even yet exercising parental care over the juveniles, though not probably feeding them. The young still clamored to be fed; but no act of feeding was clearly and indisputably seen.

True to the erratic habit of their kind, the Wyoming crossbills were notably few in number during October, 1905. The same condition prevailed into November; an ardent and repeated search among the shale-hill pines revealing but a scattered bird, here and there. Determined, however, to fix the time of nascent breeding conditions, I sought the crossbills at stated times to the end of November. On the 27th I was rewarded by finding what

[1] It should be stated here that both Dr. Bishop and Dr. Dwight consider certain supposedly year-old birds, from the region exploited in this article, to be strictly birds-of-the-year. One such Dr. Bishop believes to have been hatched from November eggs. Other specimens in similar transition plumage were being fed by parents. If the Doctors be right in their judgment in these cases, the problem of nesting time for crossbills in Wyoming is even more complicated than one had previously supposed; while the long time of parental feeding becomes thus the more incredibly lengthened. Of course it would be quite impossible for a juvenile crossbill to feed itself before the mandibles were fully developed; yet it becomes a matter of surprise that birds in transition plumage, with fully developed mandibles, should follow parents and clamor for food, being apparently, in such cases, sometimes actually fed.

It should be added that a fair series of juveniles has been taken in the Wyoming hills for the express purpose of throwing light upon the length of time required in the maturing of the bill of the crossbill. Birds with mandibles about one third developed, while wearing still the juvenile plumage, were taken in late March, April and June; while all birds taken in transition plumage were of perfect beak-development. Study of records for birds taken do not show that these transition juveniles were any more abundant in March, for example, than they were in late May.

appeared to be a family of the past summer, still together. The adult male was still not an adult, if the reader will permit the contradiction. His plumage was still semi-juvenile. Yet he was in breeding condition, the testicles being of nearly maximum size The testicles of the Red Crossbill are relatively very small; and, moreover, the two diameters are nearly equal. Measurements taken at various times during the breeding season gave the diameters .20 and .19 as about the maximals. For the November 27 male just referred to, the diameters were .17 and .19. The mature female of the November 27 family had the ova slightly nascent. The two juveniles were both females with ovaries inactive. All four birds were slightly moulting. Crossbills continued few into December, in both counties. A mature female taken December 9 had two or three ova enlarged about one diameter Data obtained from December to late March were both meager and inconclusive. However, a male taken March 10 had the testicles quite shrunken (only .15 × .17), while his mate (which was shot accidentally) was manifestly incubating.

Four days later, March 14, in a driving snowstorm, I found a finely plumaged male feeding a fully fledged young female. These two birds were taken a few days later, in the midst of intense cold. No sign of the mother bird was seen, nor did a careful search reveal a second nesting.

All through the summer of 1906, as careful and exact a study as possible was made of the actions of the breeding birds. It was found that, while normally as tame as one might expect from all analogies, both males and females were very shy and restless during March, April and May. The excited *chill-chill-chill* note was often heard; and individuals of both sexes might be occasionally seen and heard perched high on the summits of dead-topped pines, with every possible manifestation of nervous unrest and anxiety, and after a brief moment, and without apparent cause, flying swiftly away and disappearing in the distance. During the period indicated most birds appeared to be in pairs; those that were not in pairs being adjudged to be non-breeding birds. No nests, whatever, came to light during 1906. Strong effort was made all through the summer to learn the utmost possible as to nesting habits and ways. And yet, notwithstanding an abundance of pine

mast, the birds were everywhere few in numbers and inconsequent in action.

No signs, whatever, were discovered of late summer nesting. Removal from the region of observation made it impossible for me to determine whether or not the crossbills were sexually active during July and August.

## CHARACTERISTIC KAMCHATKAN BIRDS.

BY AUSTIN H. CLARK.

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FROM the 17th to the 20th of June this past summer, I was fortunate enough to be in that out-of-the-way and seldom visited town, Petropaulski, Kamchatka, where I had an opportunity to form a close acquaintance with a number of interesting birds which I had previously known only from museum specimens. I reached Petropaulski from Bering Island, after having spent nearly a month in the bleak and desolate Aleutian chain; and the sight of the pretty wooded hills about the town, the broad meadows, and the distant snow-covered mountains, combined with the songs of hundreds of birds all about produced a deep impression, and made me think at the time that there could not exist a more charming spot than this little town in farthest Siberia. The weather during my stay was perfect, warm and summerlike, the sun shining almost all the time, which I was in a condition to appreciate, as the sun is a rather rare sight in the Aleutians, and comfortable days, at this season, rarer still.

The first bird in Kamchatka to attract attention is the Siberian Ruby-throat (*Calliope calliope*), not from its coloration, for it is rather plain, nor for its ubiquitousness, for it is quite retiring, but for its most exquisite song. It is abundant about Petropaulski, and sings all day long, from sunrise to sunset, its song being the most characteristic bird note of the region. It inhabits particularly hillsides grown up to bushes, and bushy patches in the mead-

[1] Published by permission of the Commissioner.